

## ABSTRACT

The present invention provides methods for enhancing host immunity to a virus and/or a cancer and methods for enhancing the cytotoxic T-cell (CTL) mediated immune responses by providing granzyme B inhibitors to a subject. One objective of the invention is to induce long-term protective immunity to a subject in need thereof. This is accomplished by providing granzyme inhibitors to the subject which increase the number of memory-CTLs and thereby prevent or alleviate viral infections and/or treat. Providing granzyme inhibitors is also effective in the prevention of cancers. Some examples of granzyme inhibitors contemplated within the present invention include the endogenous serpins such as SPI6 and PI9, other suicide substrates of granzyme B, granzyme B antibodies, etc. Also provided are methods for expression of nucleic acids encoding granzyme inhibitors in cytotoxic T-lymphocytes (CTLs).